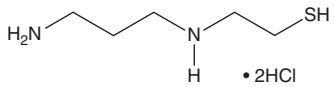
PRODUCT INFORMATION

Amifostine thiol (hydrochloride)

Item No. 18612

CAS Registry No.: 14653-77-1
Formal Name: 2-[(3-aminopropyl)amino]-ethanethiol, dihydrochloride
Synonym: WR 1065
MF: $C_5H_{14}N_2S \bullet 2HCl$
FW: 207.2
Purity: ≥90%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Amifostine thiol (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of amifostine thiol (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of amifostine thiol (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Amifostine thiol is a radioprotective agent and an active metabolite of amifostine (Item No. 14398).[1] It is formed from amifostine by plasma membrane-bound alkaline phosphatase. Amifostine thiol scavenges ABTS (Item No. 27317) radicals in a cell-free assay.[7] It prevents single- and double-stranded DNA breaks induced by γ-radiation, as well as inhibits γ-radiation-induced mutations at the hypoxanthine-guanine phosphoribosyl transferase (HGPRT) locus in V79-B310H lung fibroblast cells when used at a concentration of 4 mM.[2-4] Amifostine thiol also reduces *cis*-DDP-induced mutations at the HGPRT locus in V79-B310H cells.[5] It increases survival, reduces the loss of bone marrow progenitor cells, and inhibits decreases in intestinal collagen thickness and crypt and Paneth cell density in mice exposed to total body γ-irradiation when administered at a dose of 500 mg/kg prior to irradiation.[6]

References

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3. Sigdestad, C.P., Treacy, S.H., Knapp, L.A., *et al.* The effect of 2-[(aminopropyl)amino] ethanethiol (WR-1065) on radiation induced DNA double strand damage and repair in V79 cells. *Br. J. Cancer* **55(5)**, 477-482 (1987).
4. Grdina, D.J., Nagy, B., Hill, C.K., *et al.* The radioprotector WR1065 reduces radiation-induced mutations at the hypoxanthine-guanine phosphoribosyl transferase locus in V79 cells. *Carcinogenesis* **6(6)**, 929-931 (1985).
5. Nagy, B., Dale, P.J., and Grdina, D.J. Protection against cis-diamminedichloroplatinum cytotoxicity and mutagenicity in V79 cells by 2-[(aminopropyl)amino]ethanethiol. *Cancer Res.* **46(3)**, 1132-1135 (1986).
6. Pamujula, S., Kishore, V., Rider, B., *et al.* Radioprotection in mice following oral administration of WR-1065/ PLGA nanoparticles. *Int. J. Radiat. Biol.* **84(11)**, 900-908 (2008).
7. Walker, R.B. and Everette, J.D. Comparative reaction rates of various antioxidants with ABTS radical cation. *J. Agric. Food Chem.* **57(4)**, 1156-1161 (2009).

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